Department of the Environment
Report for 2010.

October 2011

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Foreword from the Minister – Deputy Rob Duhamel.

This annual report is the first to be issued under the name of the Environment Department.

The report summarises the progress made by the Department and States departments generally in environmental areas during 2010. It includes information drawn from national and international sources to provide a useful reference for future decision-making, including an analysis of the current "peak oil" situation.

The Eco-Active campaign, launched by my predecessor Senator Cohen, has proved to be a real success. It has raised environmental awareness amongst schools, local companies and States departments as well as the general public.

We now need to build on that success to ensure that all States policies take account of sustainability issues and environmental best practice. Jersey prides itself on its international reputation in the finance industry and there is no reason why we cannot aim for the same high standard in our environmental behaviour.

Responsibilities for government activities with a major environmental impact are currently spread across a number of departments. I am currently in discussion with my fellow ministers to re-position some of these responsibilities to ensure that there is a consistent approach to policy and strategy development in these areas.

The Environment Department must strengthen its role as the environmental conscience of the States and ensure that all major States policies are developed taking full account of their environmental impact and long-term sustainability.

I have worked with the Department over the last two years as Assistant Minister and more recently as Minister and have been impressed with the dedication and wide breadth of understanding and knowledge shown by the officers. I hope this report captures their enthusiasm and encourages States Members and the public at large to better understand both the local and global context of the Department's work.

Thank you,

Deputy Robert Duhamel

Minister for Planning and Environment

1.0 Introduction

1.1 Five Environmental Priorities

In 2005 the then Planning and Public Services Department produced the first ever baseline report that examined the State of Jersey's environment. It examined the 'pressures' on the local environment, its 'state' and the policy 'responses' needed to improve and maintain the condition of our environment. Using the 'pressure-state-response' model the following five environmental priorities were identified:

1. Energy - Climate Change.
2. Waste - High Levels of Waste Production.
3. Water - Pressure on the quality and quantity of our water resources.
4. Transport.
5. Biodiversity - Changes in our countryside and natural history.

Forty key indicators were developed to act as barometers for the environment with the intention that these would be revisited after 5 years to assess how the many facets of our local environment are faring. The first of these reports will be presented in 2011 as the State of Environment Report and will cover the period 2005-2010.

The five environmental priorities lend themselves well to viewing the progress my Department and others have made in improving and maintaining the local environment. Our work is a balance between policy initiatives and regulatory responses, often driven by Jersey's stated wish to comply with International Multi-lateral Environmental Agreements.

The five priorities are mirrored in the States Strategic Plan (*Priority 13. Protect and enhance our natural and built environment*), and in the recently agreed updated Island Plan making them not just a barometer against which we can monitor our past activity but ensuring that ongoing importance is placed against them to ensure a consistent environmental approach from the States. Annual measurement of progress will be reviewed in the Departments regular and ongoing performance management analysis into the future.

We do not work in isolation and regularly consult with advisory groups such as the Jersey Energy Trust, the Environmental Advisory Group, the Jersey Environment Forum and the Environment Scrutiny Panel to help us formulate policy and implement work programmes. As important is maintaining communication with our stakeholder groups like the Marine Fisheries Resource Panel and The Biodiversity Partnership. The input from all these different sources is always welcomed and valued and we thank those who have assisted the Department over the last year.

2.0 Energy & Climate Change

The State of Jersey Report 2005 made the following observation in identifying 'Climate Change' as the first of Jersey's five Environmental Priorities encompassing energy issues significantly within that scope:

> *'Jersey has a high reliance on private cars for local transport and a dependence on fossil fuels for industrial and domestic uses contribute to local emissions of greenhouse gases. In order to address this we must:-*
>
> > *i. Reduce our dependence on fossil fuels and introduce energy efficiency measures which will decrease the Island's contribution to climate change and its effects.*
> >
> > *ii. Make further consideration of the potential for renewable energy.*
> >
> > *iii. Prepare for the local effects of global climate change: different rainfall regimes, increased stormy weather and the impacts of this on our sea defences and flood prevention systems.'*

Rightly the State of Jersey report identified the need to reduce dependence on fossil fuels and this point was reiterated by Deputy's Wimberley's successful amendment to the Strategic Plan 2009-2014. In this, the Department was tasked with 'evaluating on an ongoing basis Peak Oil and Climate Change and reporting to the States once a year on their impacts on policy for Jersey'.

We can use Peak oil as the lens with which to view our progress in respect of energy efficiency, the investigation of renewable energy and the development of an Energy Policy for Jersey. The evolving draft Energy Policy white paper currently identifies a requirement for a Climate Change Adaptation Strategy in accordance with the third point above.

2.1 Peak Oil, Energy Efficiency and Renewable Energy

2.1.1 Why Peak Oil?

Peak oil is the point at which the maximum rate of global petroleum extraction is reached, after which the rate of production enters terminal decline. There is a live and evolving global debate about the point at which the world will reach this position with some commentators proposing it has already been reached whilst others believe it could be within the next 2 to 3 decades.

A 2009 review [i] examined the evidence supporting the proposition of a global supply peak before 2030, and reviewed 500 studies on the subject in an attempt to bring clarity to the debate.

The conclusion was reached that 'global oil depletion is well understood and well advanced. Despite data uncertainties, the risk of a peak in global oil production can be adequately assessed and this research group found that most regions peak well before half of their recoverable resources are produced with the following conclusions:

- An increasing number of regions are past their peak of production
- We have used between 28% and 56% of global recoverable resources
- Annual production is significant relative to remaining resources
- A global peak is inevitable. The timing is uncertain, but the window is rapidly narrowing'

The researchers noted that 'large resources may be available, but are unlikely to be accessed quickly and may make little difference to the timing of the global peak. Therefore the risks presented by oil depletion deserve very serious attention:

- Many forecasting methods are overly pessimistic
- But forecasts that delay the peak beyond 2030 requires assumptions that are at best optimistic and at worst implausible

- There is a significant risk of a peak before 2020 – and a possibility that it has already past'

Whilst others may present alternative timescales, what seems to be certain[ii], is that global hydrocarbon reserves are finite and their extraction will become progressively more expensive and environmentally risky as 'easy oil' is depleted.

'Easy oil' can be defined[iii] as that which is easy to extract from the earth, is found in large reservoirs, is close to the surface, is located in countries that are friendly and nearby, and, if offshore, is found in shallow water (e.g. a few hundred feet). Alternatively 'Tough oil', is deep underground, located far out into the ocean, is found in unfamiliar and tough geological formations like shale rock or in the Arctic, or is located in unfriendly and combative nations. It is worth noting that the Deepwater Horizon in the Gulf of Mexico was drilling in a mile of water.

Despite disagreement around the actual point of peak oil, many acknowledge that as the world moves from easy to tough oil or perhaps more importantly into peak demand, the anxiety around energy security and in particular geopolitical stability will rise[iv].

Whilst it is not the purpose of this report to enter deeply into the academic and technical discussions around this subject it is right to consider how the global economy will operate at a time of reduced availability of affordable energy.

Dr Chris Martenson when presenting to the UK's All Party Parliamentary Group on Peak Oil and Gas described a future beyond peak oil where there is a changing paradigm from:

- The Old Paradigm: More energy each year, more resources each year, reliable economic growth each year
- Into the New Paradigm: Less energy each year, fewer resources, reliable economic shrinkage each year.

It is the Department view that we ignore the consequences of peak oil at our peril. We must acknowledge that in the relatively near future the link between affordable hydrocarbon energy and economic growth is unlikely to be as clear as it currently is.

2.1.2 What must we do to mitigate for peak oil?

Regardless of the actual point in time that peak oil occurs, it is vital that Jersey thoroughly explores the potential for reducing its energy demand and also switching it's reliance on imported hydrocarbon based energy to renewably generated energy.

The vehicle for presenting the policies that will achieve these aims is the Energy Policy White Paper. A draft of this document is under development and will be coming forward for public consultation. It will build on the goal of the Energy Policy Green Paper to provide secure affordable and sustainable energy for Jersey. The policy will propose a hierarchy of actions that firstly aim to reduce energy demand; this is an environment where business as usual would see energy use rising. However, energy demand management alone is not sufficient to achieve the goal of secure, affordable and sustainable energy, the Energy Policy will propose an eventual switch away from imported hydrocarbon based energy to utility scale renewably generated energy most likely from our offshore waters either as tidal or wind energy.

The following Sections go on to examine progress in respect of delivering energy efficiency improvements.

2.1.3 The ECO-ACTIVE Energy Efficiency Service

i) Success to date

It was recognised in the State of Jersey Report that energy efficiency measures must be introduced and this was considered a priority by the Council of Minsters in 2008. Thus, parallel to the development of an Energy Policy, the ECO-ACTIVE Energy Efficiency Service (EES) was initiated in 2009 for a pilot year to deliver energy efficiency measures to vulnerable households. Funding was awarded as a result of the 2008 Budget Debate with £1M from States revenues being supplemented by a further £0.5M of seed-funding provided by Jersey Electricity plc. The Jersey Energy Trust oversees the work of the EES and is chaired

by Sir Nigel Broomfield and among its members has an external advisor from the Energy Saving Trust.

THE FIRST INITIATIVE: The Home Energy Scheme (HES) was launched in April 2009. It provides 100% funded loft and cavity wall insulation, heating controls, hot water cylinder and pipework lagging, draught proofing and low energy lighting to an initial target audience of those in receipt of the Cold Weather Payment from Social Security or the Westfield 65+ health plan. The target audience expanded in January 2010 to all those on Income Support. The scheme does not help those in States-owned housing since there are Housing Department initiatives for their refurbishment. By the end of 2010;

- Of a target audience of c.4,000, interventions and advice packs have been delivered to 800 households.
- A turnkey service has been provided that organises and pays for all the work; this is vital when considering the nature of some of the target group and the extent of the help they require.
- 939 applications were made to the HES (833 full applications, 106 requests for advice packs).
- A 23% response rate was experienced (Energy Saving Trust in UK have a response rate of approximately 10%).
- The team attended numerous public events to raise awareness about energy efficiency, such as the West Show and the Grassroots festival.
- 98% of customers rated the Home Energy Scheme as either 'Good' or 'Very Good'
- 94% said that contractors took appropriate care of their homes and left things clean and tidy

In July 2010 the scheme was extended to include boiler replacements and electric heating system reviews for owner occupiers within the target group. Boilers or electric radiators over 10 years old and under 70% efficient can now be replaced on a like-for-like basis with an A-rated condensing or high efficiency equivalent. Over 100 applications for heating system improvements were received within first 10 days of the scheme's launch.

THE SECOND INITIATIVE: The Community Buildings Programme was launched in May 2010**.** This delivers energy efficiency improvements to charities and not-for-profit organisations that provide a service to vulnerable islanders. By the end of 2010, 20 applications were received, covering 106 residential units and 8 day centres. Applications were received from a diverse range of organisations such as Jersey Hospice, the Cheshire Home and St Ouen's sheltered accommodation.

The interventions that EES delivers, give benefits at the personal and community level. They reduces the householder's energy consumption and this consequently lowers energy bills as well as reducing the Island's *carbon footprint and reliance on imported energy*.

Home Energy Scheme - Key facts for the end of 2010 (verified by the UK's Energy Saving Trust):

- **£772,548** spent on energy efficiency improvements through the Home Energy Scheme.
- **£1,150** average spend per Home Energy Scheme property.
- **3,664** individual measures installed.
- **2,008MWh** of energy saved per annum through measures installed in Phase 1 – that's enough energy to boil around 10 million full kettles!
- **£160,449** expected reduction in energy bills per annum.
- **430 tonnes of carbon dioxide** saved per year – that's the equivalent of around 4300 return flights from Jersey to London!
- **£133,785** spent on heating system improvements.

As well as improving the lives of vulnerable people and making significant environmental and social improvements, The EES is contributing significantly to the local economy. It is now working with 15 approved local contractors, and their numerous subcontractors, to deliver energy efficiency improvement work, investing in the local economy through its support of the heating and plumbing, electrical, roofing, insulation, carpentry and surveying trades. As a direct result of the work that the EES has generated, we have observed the upskilling and

diversification of local businesses which are now in a stronger position to provide energy efficiency services to Islanders; for example, we have seen two new entrants to the cavity wall insulation business locally.

ii) The next step for the ECO-ACTIVE Energy Efficiency Service

Whilst it is clear that a grant scheme to improve energy efficiency should be applied to low income households as a first step, there is a point at which that sector is effectively exhausted with a smaller maintenance programme required to help those entering the scheme's eligibility criteria.

The wider economic benefits of the scheme to the local economy and perhaps most importantly, the environmental benefits of energy efficiency improvements are still achieved if the scheme is extended to include the able-to-pay sector. This is an important step as it is acknowledged that non-investment in energy efficiency is a well known market failure.

Entering this sector is the next challenge and will ultimately require the States of Jersey to approve the re-allocation of the majority of the original funding.

The Jersey Energy Trust is tasked with 'assisting in the development of a persuasive case for continuing and expanding the role of the Trust in subsequent years'[v]. This development work is well underway and is centring on examining simple to administer, high impact programmes.

2.1.4 Renewable Energy

Parallel to polices currently under development in a draft Energy White Paper has been the work of the Tidal Power Commission led by Constable Murphy. The Group has already made recommendations to the Minister in respect of a long-term framework that suggests how Jersey might make best make use of this renewable resource in order to reduce the Island's carbon emissions and increase our energy independence.

2.2 The Copenhagen Accord and Cancun Agreement

2.2.1 Copenhagen

The United Nations Climate Change 15th Conference of Parties was held in Copenhagen in December 2009. It resulted in the Copenhagen Accord which fell short of the EU's goal of agreeing an ambitious and legally binding global climate treaty. However the Accord was generally recognised as a move in the right direction: it endorses at a global level the objective of keeping warming to less than 2^{o}C above the pre-industrial temperature; it requires developed countries to submit emission reduction targets and developing countries to submit mitigation actions; and lays the basis for a 'fast start' finance package of $30bn for 2010-12 and the mobilization of $100bn annually by 2020.

In December 2009, Deputy Wimberley lodged a proposition to a 'petition concerning the Copenhagen Conference in December 2009 and to request the Council of Ministers, following publication of the results of the Copenhagen Conference, to give detailed consideration to these results and report back to the States within 6 months of the adoption of this proposition on how they intend to respond, their report to include detailed proposals and timescales'. The petition contained just over 1,000 signatures that indeed provides clear evidence of concern amongst Islanders about the impact of climate change and the need to take action.

The Minister for Planning and Environment as well as the Council of Ministers supported the proposition noting that the Island's Energy Policy is the vehicle that will provide the necessary policy framework for setting and delivering carbon reduction targets but that a further response will be incorporated within this separate environmental report.

Jersey became a signatory to the Kyoto Protocol through the U.K. Government on 7th March 2007 signalling the importance Jersey places upon its global environmental responsibilities in respect of climate change. The Kyoto Protocol requires 'parties to take precautionary measures to anticipate, prevent or minimise the causes of climate change and mitigate its adverse effects, and establishes targets for carbon reduction'.

Jersey does not have a specific allocated carbon budget under the Protocol; instead the Island's emissions are counted within the U.K. inventory. Nevertheless, at the time of the extension it was agreed that Jersey would be *'expected to introduce, where possible, and having taken into account local circumstances, policies in line with the objectives of the U.K. Climate Change Programme. In relation to any subsequent commitment periods, Her Majesty's Government agrees that any obligation upon the Government of Jersey for the reduction of emissions shall be as determined by the Government of Jersey, in conjunction with Her Majesty's Government, to be what Jersey can reasonably deliver'.*

The evolving draft Energy White Paper will be proposing targets for carbon reductions in line with European Union targets of an 80% reduction on 1990 baseline levels by 2050. Appendix One (to this documents) provides a comparison of the text of the Accord and the Island's proposed response to the issues raised many of which will be in the forthcoming Energy White Paper.

2.2.2 Cancun

The Cancun Agreement was reached after the 16th annual Conference of Parties held in Cancun, Mexico in December 2010. It builds on the decisions taken the previous year in Copenhagen and also sets out processes for making further progress in the future. Key elements of the package include:

- Acknowledgement for the first time in a UN document that global warming must be kept below 2°C compared to the pre-industrial temperature, and establishment of a process to define a date for global emissions to peak and a global emissions reduction goal for 2050;
- The emission pledges of developed and developing countries have been anchored in the UN process and a process set out to help clarify them. The text also recognises that overall mitigation efforts need to be scaled up in order to stay within the 2°C ceiling;

- Agreement to launch a process to strengthen the transparency of actions to reduce or limit emissions so that overall progress can be tracked more effectively;
- Confirmation of the goal that developed countries will mobilise US$ 100 billion in climate funding for developing countries annually by 2020, and establishment of a Green Climate Fund through which much of the funding will be channelled;
- Agreement on the Cancun Adaptation Framework to enhance action on adaptation to climate change;
- Launch of a "REDD+" mechanism enabling action to **r**educe **e**missions from deforestation and forest degradation in developing countries;
- Agreement to consider setting up new carbon market mechanisms going beyond a project-based approach;
- Establishment of a Technology Mechanism, including a Technology Executive Committee and a Climate Technology Centre and Network, to enhance technology development and transfer;
- Establishment of a clear process for reviewing the adequacy of the goal of keeping global warming below 2°C, including consideration of strengthening the goal to 1.5°C, to be concluded in 2015;
- Extension of the work of the ad hoc working groups under the UN climate change convention and the Kyoto Protocol for a further year while leaving open the legal form of the eventual outcome of the negotiations

These decisions are to be welcomed as being action-orientated and a sign that international climate change negotiations are on track but it is still disappointing that the 'holy grail' of a legally binding global climate framework is still illusive. Over the coming months the Department will be more closely examining the implications of the Cancun Agreement for Jersey and incorporating outputs of this examination in the evolving Energy White Paper and its implementation.

2.3 Animal Disease

The effect of climate change and associated weather may include extension of the ranges of

some animal diseases, particularly those which are transmitted between animals by an insect vector. As the range of the vectors extends, susceptible populations may be exposed to viruses with potentially devastating effects e.g. African Horse Sickness. Some of these viruses are zoonotic i.e. cause disease in humans as well as animals e.g. West Nile Fever.

Jersey will continue to monitor the European situation and maintain links with recognised experts, for example at the Institute for Animal Health, Pirbright, Surrey, to provide advice and information to animal owners, and bring forward legislation where appropriate. Liaison between the States Veterinary Officer and medical staff in the Department of Health will continue supported by valuable meteorological data and risk analysis from Jersey Met.

3.0 Waste

The 2005 State of Jersey Report highlighted waste, and in particular 'high levels of waste production' as the second environmental priority. The Report notes :

> *'Excessive waste generation represents a misuse of resources and causes pollution. Jersey's municipal waste has risen by, on average, almost 3% for the last five years and our levels of recycling are not as good as have been shown possible in other European Countries. Emissions from our present incinerator fall well short of accepted agreed standards.*
>
> *In order to address this, the Environment and Public Services Committee has developed a draft Waste Strategy which calls for:-*
>
> *i. The urgent replacement of the inadequate waste disposal facility at Bellozanne*
>
> *ii. Strict adherence to be paid to internationally agreed standards in future waste management planning.*
>
> *iii. Improvements in recycling rates'.*

The first and third points highlighted by the Report relates to the operational implementation of waste policy which currently lies with the Department for Transport and Technical Services. The environmental improvements that will come from a new plant that operates in line with European best practice should not be underestimated. Following a successful commissioning period it is expected that the plant will be fully operational in 2011.

Since the adoption of the Solid Waste Strategy in 2005, a comprehensive and evolving programme of recycling has been implemented that has shown that the people of Jersey want to support the 'reduce, reduce and recycle' programme. A growing number of parishes have implemented kerb-side collections and an increasing number of bring banks are

strategically positioned across the Island which has all contributed to a rise in the Island's recycling rate from 28% in 2006 to 32% in 2009, a trend we hope to see continue. Particularly important is the removal of materials for recycling like batteries and waste electrical electronic equipment which means that the hazardous components can be dealt with appropriately ensuring that only appropriate material enters the Energy from Waste Plant. Between 2008 and 2009 the tonnage of batteries recycled quadrupled due the availability of battery recycling stations and a successful education campaign.

The ECO-ACTIVE campaign has joined the 'Recycle for Jersey' team in purchasing a trailer that is designed to take the environmental message out and about. The Trailer has attended numerous public events this year allowing our Education and Awareness officer to meet many and varied people and spread the environmental message. You might have seen the team at the West Show where we featured energy efficiency advice or at the Grassroots eco-festival where we carried out some taste tests between tap and bottled water or even at the cider festival. This is not one way traffic though – the trailer has been used as a consultation hub allowing people to respond to public consultations, for example the Island Plan, which means we can hear your thoughts and ensure that our policy development is as collaborative as possible.

3.1 The regulation and control of waste activities in Jersey

3.1.1 The Waste Management (Jersey) Law 2005

The Waste Management (Jersey) Law 2005 (the Law) came fully into force in 2007. The Law implements the OECD Decision[1] and the Basel Convention[2] which, along with and the EC Regulation (EC) No 1013/2006 on shipments of waste, enables a legislative framework within which Jersey can ship waste to European member states. The Law is administered by Environmental Protection, a part of the Environment Division.

[1] The OECD Decision C(2001)107/FINAL establishes a framework for the OECD Member countries to control transboundary movements of wastes destined for recovery operations within the OECD area.
[2] The Basel Convention is an International convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal concluded at Basel on the 22nd day of March 1989, as amended

In particular, the Law:

- implements the Basel Convention in Jersey. This enables the shipment of hazardous wastes out of the Island for disposal. This is of practical benefit to the Island as it allows the export of hazardous wastes currently being stored at States facilities[3].

- enables Jersey to adopt "environmentally sound management of hazardous and other wastes", as part of its own internal waste management activities. This is primarily achieved through new regulatory licensing, *including*:
    - Regulation of unlicensed or harmful activities involving waste.
    - Control procedures for movements of hazardous wastes exported from Jersey for disposal or recovery in other jurisdictions.
    - Licensing and control of those waste management activities specified in the Law
    - Registration of carriers of hazardous or healthcare wastes unless otherwise exempt.
    - Control procedures for movements of hazardous or healthcare wastes within Jersey
- is an additional tool for pollution control available for Environmental Protection.

3.2 Activities and successes during 2010

Regulation of the new Energy from Waste Facility.

The Waste Management Licence for the new Energy from Waste plant at La Collette (EfW) was issued using the consultation protocol defined by the Law. The licence stipulates that emissions to air are fully compliant with the EU Waste Incineration Directive 2000/76/EC. Such improvements in emissions to air (compared with the Bellozanne incinerator) contribute to the objectives in the evolving draft States of Jersey Air Quality Action Plan.

[3] The export of hazardous waste from Jersey for disposal was prevented by the UK Government in 2002

“Knock – on” benefits of Tighter Regulation.

The Law also delivered additional best practice compliance derived from the Waste Electrical and Electronic Equipment Directive 2002/96/EC and End of Life Vehicle Directive 2000/53/EC. This was achieved by appropriately dealing with or removing from the waste stream for recycling and recovery these items prior to incineration. Additionally, the Waste Management licence for the EfW requires TTS to regularly review the recovery rate of waste heat energy from the steam.

Regulation of Contaminated Land Clearance and Remediation from the Town Park.

Following consultation, a Waste Management Licence was issued to regulate the use of mobile plant for the treatment of controlled waste and remediation of the new Town Park in St Helier.

Regulation of the States of Jersey Green Waste Facility.

Liaison between TTS, Health Protection and Environmental Protection on the operation and licensing of the green waste facility at La Collette has led to TTS adopting state of the art processes. This has led to the UK Environment Agency wishing to visit the site.

Regulation of the Export of Hazardous Wastes

Jersey is a signatory to the Basel Convention via an agreement with the UK. This has resulted in strict and comprehensive regulation of hazardous waste shipments, both in terms of what is permitted to be shipped and the methodologies employed for recovery or disposal of wastes to ensure maximum environmental safeguard. In 2010, a total of 100 tonnes of hazardous waste was exported to the UK for specialist disposal by high temperature incineration under the European transboundary movement of waste notification procedures. These hazardous wastes had been stockpiled since 2002 due to the expiry of the memorandum of understanding with the UK.

Since 2008, Environmental Protection have processed and consented to a total of eight shipments; seven shipments of waste for recovery and one for the disposal of hazardous wastes mentioned above.

There were a further nine notifications for waste exports on which Environmental Protection provided advice in 2010.

Encouragement for Recycling.

Recycling and re-use of materials is encouraged through the Waste Management Law by exempting such activities from the full waste management licensing regime. Recycling activities exceeding certain thresholds or sorting mixed waste materials still require licences. Accordingly, the Parish of St. Helier have submitted an application for a licence to allow the sorting and baling of card/paper, plastic/tins/cans from the household waste for shipment to recycling facilities in France.

Pragmatic Regulation.

Regulation needs to realistic and practical and the Department follows this approach through all of its regulatory functions. A good example of the pragmatic approach taken by officers during 2010 involved the investigation of a site in St. Lawrence. Environmental Protection Officers were informed of the dumping of approximately ten vehicles in a field. After liaison with officers from Health Protection and having visited the site and consulted with the vehicles owner, our officers adopted a pragmatic approach by proposing a reasonable time period within which the vehicle should be broken up and removed. The owner complied with this requirement with a net environmental benefit being the reduction in potential for pollution to surface and groundwater.

4.0 Water

The third environmental priority stated by the State of Jersey 2005 Report was water and most significantly 'Pressure on the quality and quantity of our water resources'. The report notes:

> *'The replenishment of local water resources is from rainfall - a finite resource. The quality of these waters is affected by diffuse pollution (such as nitrates from fertilizer applications and soakaways) or point source pollution (such as oil spillages from heating tanks). Around 90% of the Island's population receives their water from the public water supply which is predominately collected from streams.*
>
> *In order to address this :-*
>
> *i. Basic controls are necessary to ensure equitable distribution of this scarce resource. The draft Water Resources Law addresses this issue.*
>
> *ii. We must continue to enforce measures that minimise the occurrence of pollution from point source or diffuse sources.*
>
> *iii. We must continue to reduce the legacy of pollution. To do so, we need good land management practices to minimise any further contamination'*.

Dividing the island's annual rainfall by the island's population gives an estimate of the water available per head of population. The average annual quantity of water (approximately 440m^3 water per person) places Jersey into one of the lowest categories in the UK. If one considers that, on average, 97% of the Island's public water supply is derived from surface water sources which are largely derived and reliant upon a high groundwater level then one starts to appreciate just how vital it is to protect not only the quantity, but also the quality of our Island's water supply.

The protection of this resource is the responsibility of the Water Resources Section within Environmental Protection.

Protection of the quantity of the resources is achieved through the recently enacted Water Resources (Jersey) Law 2007, whilst water quality (within streams, groundwater and coastal waters) is safeguarded through the Water Pollution (Jersey) Law 2000. The section is also tasked with regulating the supply and quality of water supplied by Jersey Water into homes through the Water (Jersey) Law 1972 as amended.

4.1 Water resources

Applications to licence or register abstractions from water sources have continued to be received during 2010. In the case of licence applications, this has been largely due to a particularly dry spring. An additional 16 licence applications were received, processed and granted during 2010. There was one application to revoke an existing licence. A total of 198 licences were in force at the end of 2010.

The Water Resources (Jersey) Law 2007 required that all existing groundwater abstractions used for domestic supply or which did not exceed 15 cubic metres per day should have been registered before the end of 2009. It was probable that several hundred active abstractions had not applied to be registered within that deadline. A policy to actively encourage registration of previously un-registered abstractions was put in place early in 2010. This has resulted in an additional 215 registrations during the year.

An initial assessment of the maximum abstraction that could occur in a year, based on the data collected from licence and registration applications, has been carried out. This maximum quantity is only likely to be abstracted in a particularly dry year (for example during a drought when the Island's water resources would be under greatest stress). A summary of the estimated maximum abstractions according to water use is given in Table T1.

Table T1 **The maximum total volume of ground and surface water that could potentially be abstracted (cubic metres) categorised by use (data from the 2010 registrations and licenses issued under the Water Resources (Jersey) Law 2007)**

Water use category	Groundwater abstractions		Surface water abstractions
	Registered sources	Licensed sources	Licensed sources
Agriculture	57,815	579,630	816,510
Amenity*	2,053	136,292	0
Business	125,575	821,561	414
Domestic	712,585	8,815	0
Horticulture	2,508	211,993	0
Public service	5,396	42,496	4375
Public supply	0	452,600	64,911,600
Totals	**905,932**	**2,253,387**	**65,732,899**
No. registrations/licences	**3,113**	**119**	**78**

**Amenity includes water use for parks, playing fields and golf courses.*

The volume of water abstracted for public supply far outweighed abstractions for all other purposes. In terms of groundwater abstractions, the maximum total abstracted for public supply (administered by only two licences) is only exceeded by the total abstracted for agricultural use (administered by 66 licences).

In 2010, a total of 3226 households comprising 8939 people, were provided with domestic water supplied from registered abstraction sources (boreholes and wells). A further 50 households (161 people) obtained their domestic supplies from licensed abstraction sources. The domestic total includes an estimate for garden watering use at 1926 properties (water volume 208,000 m^3 per year). In many cases, registered abstractions supplied more that one property and often provide water for multiple uses (e.g. domestic and agricultural or business uses).

The estimation of the maximum groundwater abstraction (about 3.2 Mm^3/year) is similar to that previously estimated by the British Geological Survey in 1998 (3.6 Mm^3/year). The difference is most probably due to changes in agricultural use, most notably due to the demise of the tomato growing sector, which formerly was a major user of irrigation water. Also notable was a slight reduction in domestic use of groundwater (0.9 to 0.7 m^3 per annum). This is due to the availability of improved data on which to base an estimate as well as the increased availability of mains water supplies.

It is considered that there may be as many as 200 to 250 abstractions which are not registered. Environmental Protection will continue to encourage households to register un-registered abstractions. A watching brief will be maintained for large-scale un-licensed abstraction of water, particularly that used for the irrigation of crops during dry periods in the growing season.

4.2 Quality of water

The Water Pollution (Jersey) Law 2000 has successfully been used to tackle the reduction of point source pollution[4] within Jersey. The legislation gives powers to staff as designated officers to investigate pollution incidents and, if necessary, prosecute offenders.

The total number of reported pollution incidents[5] peaked at around 160 incidents per year during the three years following the implementation of the Water Pollution (Jersey) Law 2000 (Fig. F1). Thereafter, the number gradually reduced to around 100 incidents per year (2004-2010) average.

[4] point source pollution is pollution arising form an identified single source, such a leaking domestic oil tank or an overflow of sewage

[5] reported to the 24 hr. pollution hotline number (tel: 709535)

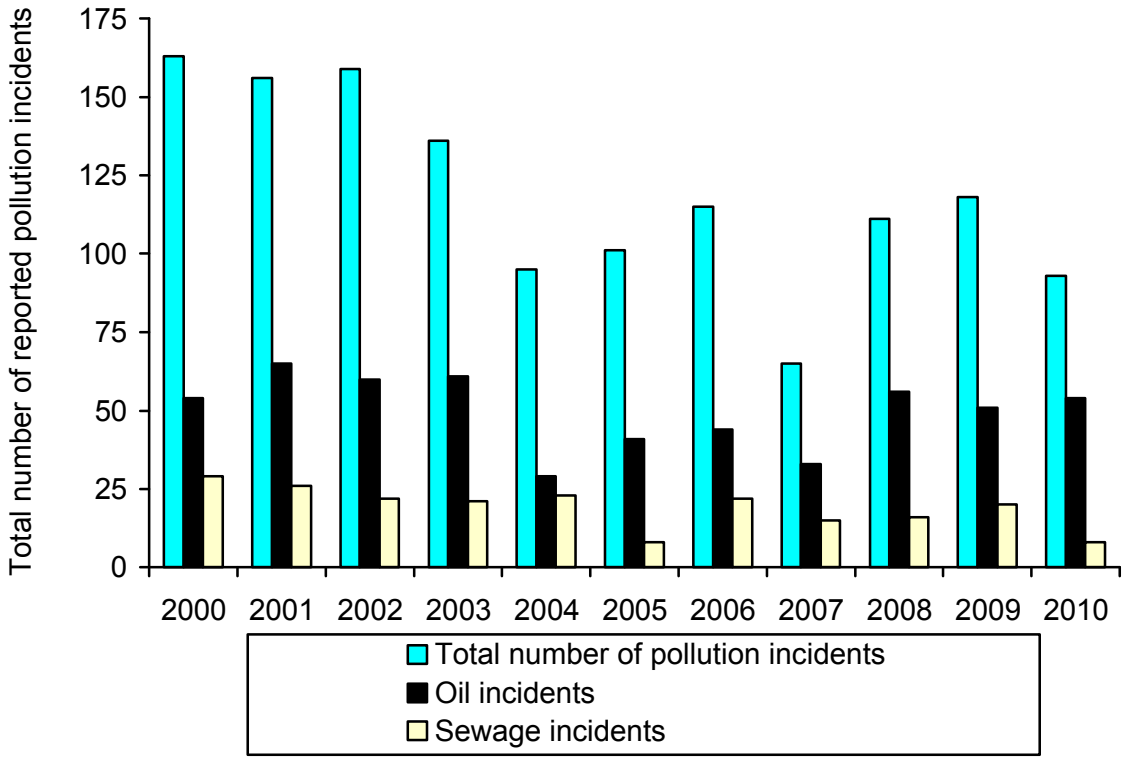


Fig. F1 The total number of pollution incidents recorded by Environmental Protection 2000 to 2010 (2010 estimated figure to year end)

During 2010, a total of 93 incidents were reported to Environmental Protection. Oil incidents accounted for more than half (58%). The remaining incidents were sewage and chemical/industrial incidents (9% and 10% resp.) and agricultural or natural (4% and 5% resp.). Figure F2 shows the enforcement action taken during 2010 against these pollution incidents.

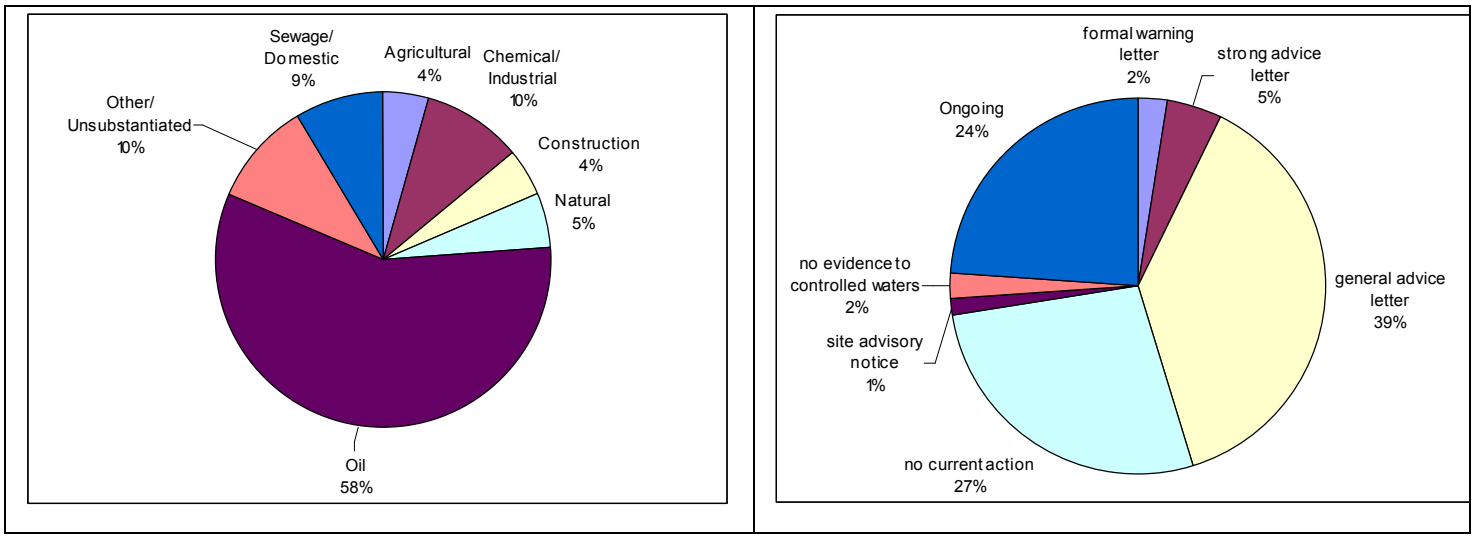


Fig. F2 Reported pollution incidents by type (percent) and enforcement action taken in accordance with the Water Pollution (Jersey) Law, 2000 during 2010

Between 2000 and 2010, oil incidents (pollution mainly resulting from domestic oil tanks and pipework) accounted for approximately half of the total number of incidents. As a result of this high proportion, an 'oil care group' was established between Environmental Protection and oil distribution companies/ heating engineers to coordinate pollution prevention work undertaken.

During 2010, outputs from the 'oil care group' included:

- continued distribution of the oil tank sticker[6]
- revision and publication of an oil care leaflet
- drafting of revised Building Bye Laws regarding oil tanks and their installation

4.3 Water Quality Monitoring

Environmental Protection monitor the quality of the Island's water environment. This information, along with local water quality data from other sources, is held on a central comprehensive public database.

This monitoring is required under the Water Pollution Law and is essential to gather baseline water quality data and to monitor trends, determine the effect of policy interventions and

[6] all domestic oil tanks must display an oil care sticker with the pollution hotline number

assess the impact of pollution incidents. In 2010, more than 2000 routine water samples were taken by the section, of streams, groundwater, outfalls and coastal water.

As well as monitoring chemical and bacteriological determinands, the section also monitors biological water quality. Biological water quality is measured by monitoring the types and abundance of different insects that have part of their life cycle in water. Biological monitoring is a good indicator of long-term water quality because some 'macro-invertebrates' are more tolerant of pollution than others. A wide range of families of high scoring animals indicates 'good or excellent' water quality, whereas lower scoring animals indicate 'bad or poor' quality. The beautiful 'Demoiselle' (damselfly) nymph and adult are shown below – this is a biodiversity action plan species for Jersey and is an example of a high scoring animal.

The biological quality of Jersey's streams is improving, with slightly less than half (47%) of the Island's streams now achieving 'good or excellent' biological water quality, compared to 18% ten years ago (see Fig F3).

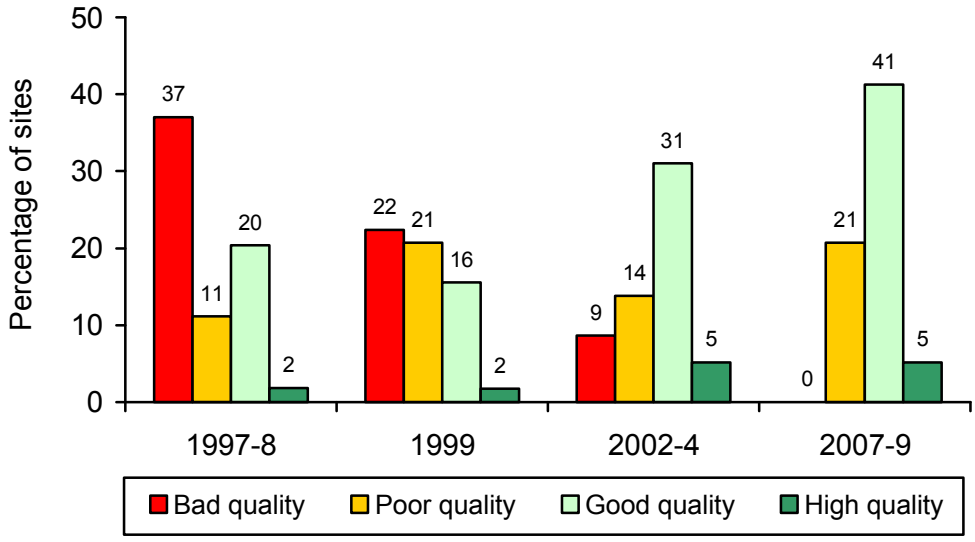


Fig F3. The proportion of streams achieving bad/poor quality compared to good/excellent quality as classified by macro invertebrate sampling over a ten year period (1997-8 to 2007-9). The data shows an increase in stream quality throughout the period.

** For clarity for the long-term trend of categories of 'moderate and modified' status have not been included.*

The water quality at our local beaches is generally high. Since 2001, all of the Island's designated bathing waters passed the 1976 European Bathing Water Directive *imperative* standard in seven out of the ten year period.

Compliance of Jersey's bathing waters with the European Bathing Water Directive *guide* standard (that is twenty times more stringent than the imperative standard) has varied. In broad terms, compliance with the guide standard has been higher in drier summers. Guide compliance during 2009 and 2010 was 88 % and is the best since monitoring began (see Fig F4).

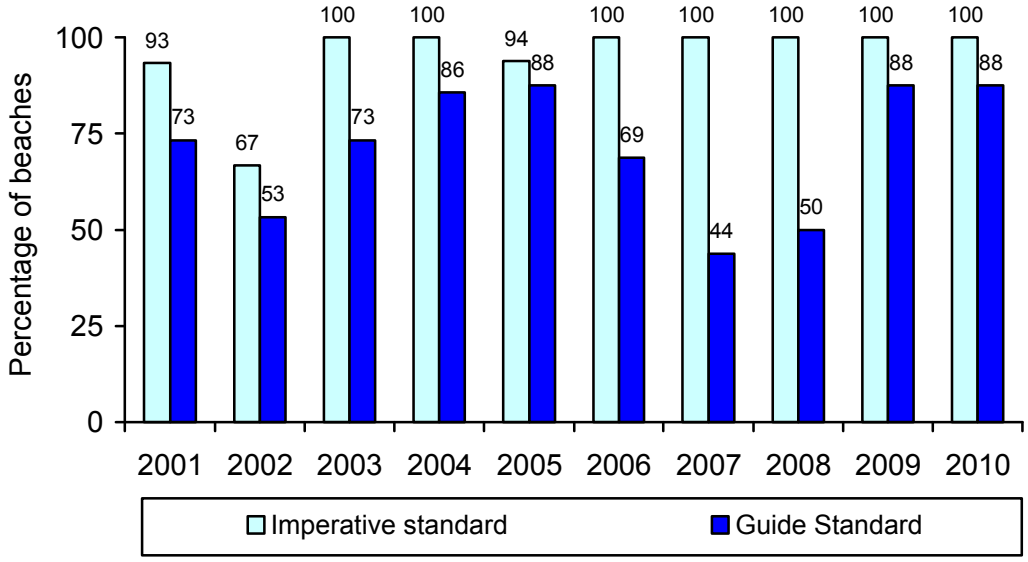


Fig F4 Percentage of bathing waters passing the imperative and more stringent guide standard, 2001-2010.

4.4 Diffuse water pollution and nitrate and the Diffuse Pollution Project

Despite many water quality improvements, our data shows that Jersey still has elevated levels of nitrate in streams and groundwater compared to many other places, and certainly higher than most places in Europe. Nitrate is highly soluble and tends to be caused by what is termed 'diffuse[7] water pollution' rather than 'point source pollution'.

Although not the sole source, agricultural sources in the Island are significant, because agriculture accounts for about 57% of the land coverage (see Fig F5).

[7] Diffuse Pollution can arise from a number of origins, which individually may be small, but it is their collective impacts that are problematic. Sources include agriculture, urbanisation and road runoff.

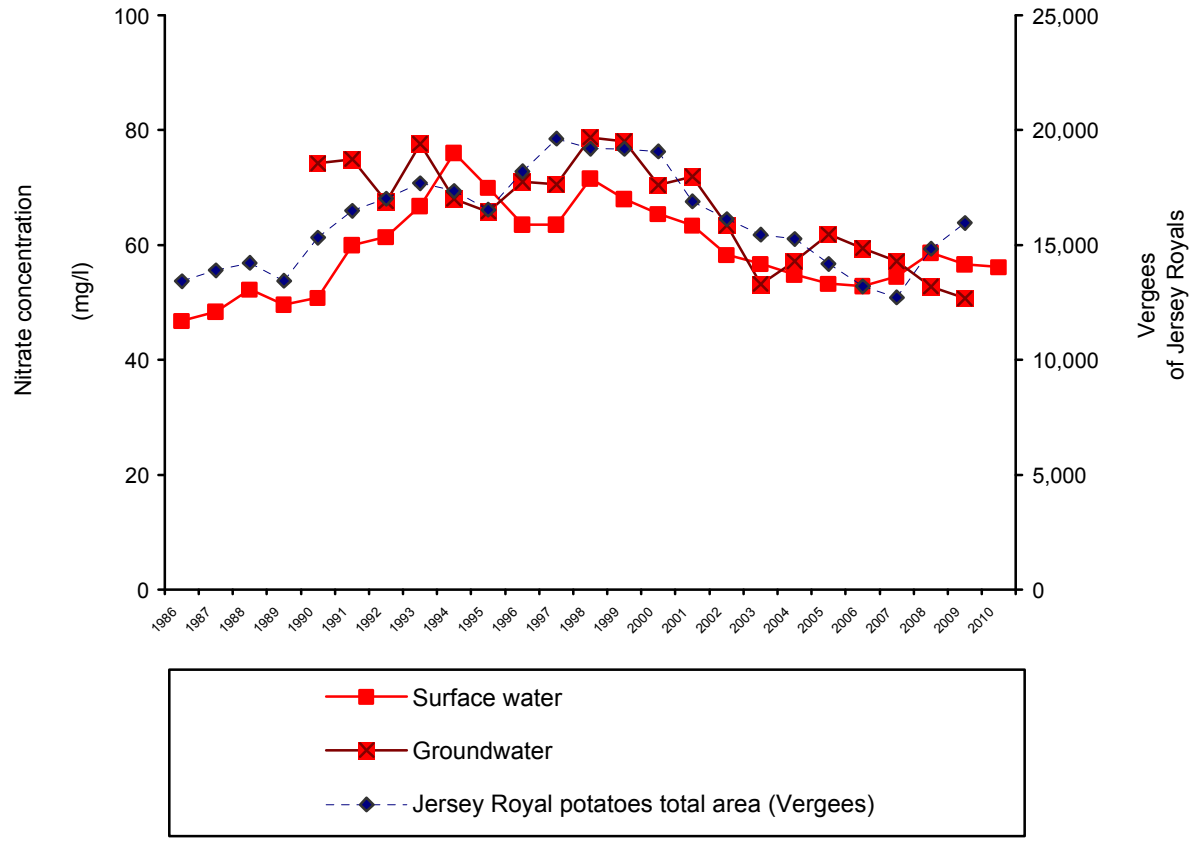


Fig. F5 Annual mean concentration of nitrate (NO3 mg/l) recorded in surface water (Jersey Water data) and groundwater (Environmental Protection borehole data) and the total cultivated area of Jersey Royal potatoes (vergées).

Over the last 10 years, approximately 60% of surface water samples taken[8] had nitrate levels more than 50 mg/l. This compares to about 3% of surface water in the 27 countries of the EU. The island-wide biannual borehole and well testing undertaken by Environmental Protection shows approximately the same ratio in groundwater. This compares to about 15% over 50 mg/l in the 27 countries of the EU.

As a consequence, water in the public supply and in many private boreholes and wells exceeds the wholesomeness standards as set out in the Water (Jersey) Law, 1972. Jersey Water blend higher nitrate sources with low nitrate sources where possible and have the option of using the desalination plant, however this is very expensive. In 2010, Jersey Water used the dispensation under the Water (Jersey) Law, 1972, which allows 33% of samples of

[8] source Jersey Water

the mains water supply in any one year to exceed the 50 mg/l limit (but be no greater than 70 mg/l) in the Drinking Water supply on 23 occasions, principally during the spring months.

The Diffuse Pollution Project (DPP) started in 2009 and is working to encourage stakeholders in the trial catchments to work together in order to look at practical methods of reducing diffuse pollutant losses from agricultural land. All of the farmers approached have agreed to participate and co-operation and dialogue is ongoing. The DPP is a jointly funded Environment Departmental initiative and success will be assessed in terms of both water quality improvements and stakeholder engagement.

5.0 Transport

The fourth environmental priority from The State of Jersey Report 2005 was Transport. The report notes:

"'Jersey has the world's highest car ownership ratio as well as a dependence on air transport for external travel. This results in:

- *local congestion and an associated reduction in economic efficiency*
- *high carbon dioxide emissions which contribute to the greenhouse effect*
- *localised air pollution that occasionally breaches internationally agreed standards and has risks to health*
- *the fragmentation of natural habitats by the road networks, airport and harbour development.*

In order to address this:

i. The Environment and Public Services Committee is developing a Sustainable Travel and Transport Plan that will be delivered in 2005

ii. We will tackle congestion and encourage fuel efficient vehicles through fiscal mechanisms."

5. 1 Tackling emissions, congestion and air pollution through the Sustainable Transport Plan

In recognition of the challenges associated with transport, the Sustainable Transport Plan (STP) was formally adopted by the States in 2010. Although this was considerably later than was anticipated in 2005 when writing the State of Jersey report, the strategy had evolved to take account of changing circumstances and was re-consulted upon in 2009. In parallel with the development of the strategy, a number of workstreams were already underway and those carried out with the Environment Department are outlined below:

5.1.1 The draft air quality action plan and tackling pollutants

Road transport accounts for over one third of final energy consumption in Jersey and is the key contributor to air pollution. Nitrogen Dioxide (NO2) and particulates (PM10 and PM2.5)

from road transport emissions present the greatest challenge to Jersey in terms of improving air quality.

The draft Air Quality Action Plan developed by the Environment Department in 2010/11 identifies the need, as a minimum, for the protection of human health, to monitor both Nitrogen Dioxide and particulates (PM_{10} and $PM_{2.5}$) pollutants.

Implementation of the recommendations within the STP will improve air quality both by reducing the amount of road traffic and by increasing the proportion of vehicles with lower levels of emissions. The STP contains a suite of recommendations which will impact on all transport operations, to meet an overall target of reducing peak hour traffic levels to and from St Helier by 15% by 2015.

The Draft Air Quality Action Plan (AQAP) supports the goals of the STP, especially in relation to emissions testing of commercial vehicles and encouraging take up of low emissions vehicles. In addition, the AQAP identifies additional actions that will contribute to addressing the issue of emissions from transport:

- Implementation of ECO-ACTIVE States will provide a mechanism for managing emissions from the States fleet and lease vehicles. This will also provide the framework for reviewing contract specifications for contractor's vehicles whilst working with the States on projects.
- Consideration will be given to developing new supplementary planning guidance in relation to air quality impacts of new developments, in terms of the likely transport impacts of the proposal as well as the potential cumulative impacts of the development.
- Implementation of workplace travel plans, both voluntary plans undertaken by the business community and mandatory plans that have been required through the planning permit process, introduce behaviour change programmes within existing developments, whilst providing a mechanism to increase the availability and access to green travel infrastructure, e.g. cycle parking. Monitoring of these plans will provide information on both modal shift and reductions in associated emissions. TTS

will be providing support to organisations developing travel plans through a dedicated officer to be appointed in 2011/12.

5.1.2 The role of Education and the ECO-ACTIVE campaign

A package of "soft measures" is also in place through the ECO-ACTIVE programme aimed at achieving widespread acceptance and overcoming barriers to achieve sustainable transport targets. These include strategies and information provision for local businesses, schools, states employees and the general public.

- During the school holidays, rush hour traffic in Jersey drops by 15%. In 2009 ECO-ACTIVE launched a travel plan toolkit to enable all schools to develop their own sustainable travel plans. The School Travel Plan project is now supported through the ECO-ACTIVE Sustainable Schools Framework and local work towards the international Eco-Schools and Healthy Schools programmes. Ongoing progress is monitored by the 'Safe Routes to School Group', a cross-departmental working group of officers from TTS, Education, the Police, Health and Environment. In May 2011 all schools will be further engaged and encouraged through an Island-wide Schools Green Travel Day.

- A trial Workplace Travel Plan was commissioned by in 2009. The methods and findings of this process formed the basis for the development of a Workplace Travel Plan toolkit which was launched to local businesses during an Island-wide Green Travel day In September 2010.

- The ECO-ACTIVE States programme launching in May 2011 will require all departments to carry out a workplace travel plan for staff.

- The community outreach trailer run by ECO-ACTIVE and TTS' 'Recycle for Jersey' appears at many local events each year to provide information for Islanders on sustainable travel choices. The Sustainable Transport Policy white paper consultation was also successfully brought to the general public through this means, with several special appearances in town and at local events over the consultation period.

5.2 Fiscal Mechanisms to tackle congestion and emissions

Vehicle Emissions Duty (VED) was introduced in September 2010 with the aim of encouraging those purchasing new vehicles to choose those with lower emissions by charging a differential rate of duty that rises according to the vehicle's emissions. The duty is payable once on registration with those emitting below 120g/CO_2/km being exempt. This, combined with European legislation ensures that new models of vehicles are as fuel efficient as possible. This gives a strong signal to the motorist that when they cannot use alternative more sustainable transport options, they should be aware and responsible for the pollution that their car causes. The States of Jersey car fleet has moved substantially to low emission / high efficiency small petrol or diesel cars in the last 2 years reducing emissions as well as making efficiency savings. This is a good example of good environmental practice making good business sense.

The electric car market is moving towards the commercial production of all-electric vehicles and it is likely that these innovations will reduce the impact of personal car use where it is unavoidable. Jersey Electricity plc have taken part in a trial of pre-production all-electric cars and these are soon to be available on the open market. This has shown the technology is easily transferable to Jersey where journeys are short and low-carbon electricity available for over-night charging from ordinary electricity points.

To facilitate the uptake of electric and low emission vehicles the Transport and Technical Services Department have introduced the Eco-Friendly parking permit for cars with less than 100 g/CO_2/km or for hybrid vehicles. This entitles the permit-holder to half price pay cards or season tickets further incentivising people to make environmentally responsible purchasing choices and I have no doubt that these will be eagerly adopted particularly as the market continues to deliver more choices for low emission or hybrid cars.

6.0 Biodiversity

The fourth environmental priority The State of Jersey Report 2005 identified was in the area of Biodiversity and in particular 'changes in our countryside and natural history'. The report notes:

> *'The Island is experiencing declines in the populations of common species such as toads, butterflies and farmland birds like goldfinches. To confirm the actual levels and explain the causes of these declines, we need robust, long-term scientific evidence. Nevertheless, the main causes of change in marine and terrestrial biodiversity are likely to be:*
>
> *a) Encroaching development; Development of previously undeveloped land causes a gradual suburbanisation of the countryside and coastal zone.*
> *In order to address this we must:*
>
> *i. Adhere to the policies guiding development control as laid out in the Jersey Island Plan 2002.*
>
> *ii. Encourage landowners to preserve Jersey's natural habitats on their land; for example, wildlife friendly gardening helps prevent the fragmentation of natural habitats.*
>
> *b) Change through habitat succession; although habitats change naturally, man's influence distorts nature's process and continuity.*
> *In order to address this we must carefully manage naturally occurring habitat succession to maintain biodiversity.*
>
> *c) Changes in the rural economy; traditional and long-term management of the countryside gave us today's familiar landscape. But economic pressures and changing practices have led to local water pollution and changes to our traditional methods of land management.*

In order to address this we must re-engineer the rural economy to create a profitable working countryside with diverse rural activities that sustains our rural landscape and the habitats it supports'.

6.1 A National Park for Jersey

A public consultation on the proposal for a National Park for Jersey was conducted during March 2009. A combination of questionnaire and workshops was chosen to ensure that a) the process was as democratic as possible –i.e. open to all and b) that qualitative data relating to perceptions and specific concerns of key stakeholders could be gathered.

The key headlines from the questionnaire were that there is support for a National Park, with 84% either agreeing or strongly agreeing that the creation of a National Park would bring benefits. In relation to the scale of the proposed National Park, 84% either agreed or strongly agreed that the boundary should extend beyond St Ouen's Bay and of those, 83% either agreed or strongly agreed that the boundary should be extended to include the South-West coast from Noirmont to Le Petit Port.

This public consultation led to the inclusion of Policy NE6 – Coastal National Park in the (Draft) Jersey Island Plan, recognising that parts of the Jersey coast and countryside are considered to be of national and international importance.

6.2 Countryside and Ecology

The 10th conference of the Parties signatory to the Convention on Biological Diversity (CBD or Rio Convention) was held in Nagoya, Japan in October 2010. The conference recognised the world's failure to slow the decline in extinction rates and that we have failed to meet our targets in biodiversity conservation set at previous conferences.

Loss of biodiversity is caused by many and varied issues, including; changes in agricultural practice; invasive species; land development; etc. and these and other effects are exacerbated by climate change. The background extinction rate is greater than at any other time in the earth's history.

Common Toad (Bufo bufo) – a case study

The study of common toads shows us a good example of an animal that is suffering from creeping urbanisation, habitat change and other effects of land development. Despite being the most iconic species on the Island – our toad is called the 'Crapaud'. This cultural icon is disappearing from Jersey at an alarming rate. A recent PhD study provides evidence that the distribution of common toad is declining in extent, as is the size of the population.

More worrying is the fact that those numbers make up numerous, discrete and fragmented populations, which means that each population does not have enough members to be sustainable, and further more, the populations are too separated to interbreed. This fragmentation is due to development and changes in agricultural practice, causing the toads to find refuge in garden ponds as the wider countryside is now unable to support them. However our urban environment is changing at a pace, and the development of walls, roads, paving etc. reduces opportunities for toads to interbreed and forage.

Jersey protects its local biodiversity in various ways, but the Island Plan Policy is the main document which addresses habitat loss and development. The new Island Plan proposes numerous policies which are aimed to protect the countryside, coastal areas and the Island's rich, natural habitats.

Les Blanches Banques	130.1
Les Landes	101.6
La Lande Du L'Ouest	44.5
Noirmont	41.3
Portelet	29.8
Ouaisne	13.7
Le Petit Pres	2.5
TOTAL	**363.5**

Table T2 Sites of Special(ecological) Interest.

The 11 designated ecological SSI's in Jersey (See Table T2) are under constant pressure from development in this small Island. The planning process provides a transparent process for evaluating potential harm, and the requirement for Ecological Impact Assessment, now enshrined in the Planning & Building (Jersey) Law 2002 further helps to ensure that adverse impacts of development are recognised and where possible mitigation measures are provided to address the damage.

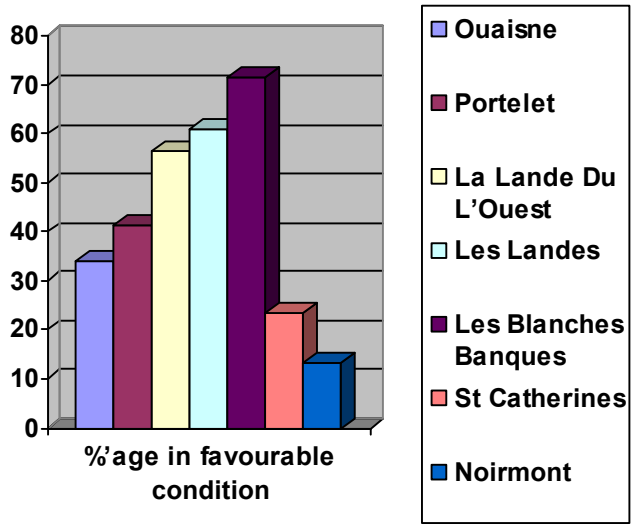
In 2009, the Environment Department launched the first Habitat Action Plan (HAP), under the Biodiversity Strategy. This provides general guidance to issues in urban development. The entire Island is defined as Urban due to the density of its population, and the level of development means that gardens and parkland make a significant contribution to the conservation of biodiversity, however we are losing gardens at a fast rate. A lack of statistics make it impossible to say how much garden area is being lost to housing development every year, but this loss means fewer ponds, less flowering plants and fewer nesting opportunities. Over 500 Hectares of the Island are managed for nature conservation by the Environment Department, of which 360 Hectares have been designated as Sites of Special (ecological) Interest (See Table T2).

The Department uses contractors to manage the land, and under a service level agreement with Transport and Technical services, a team of six people are dedicated to habitat management on this land.

The larger sites are more robust, and often take less management per unit area than the smaller, more vulnerable sites and this is reflected in the condition of the habitats.

Hundreds of projects and tasks each year, from collecting litter to removing invasive species, ensure that the land is managed in an appropriate way. The management tasks are monitored against a set of habitat condition objectives, to determine a 'quality' of the environment. All of our managed SSI's have been monitored and the results are presented graphically below (Figure F6).

Figure F6 SSI Monitoring.



Large areas of land, or small areas with substantial boundaries are less affected by events that happen on or near to the boundary. Issues such as; Pollution; development ; disturbance etc. all play a role in degrading habitat condition, and usually, negatively affect species status.

These effects have a greater impact on a small site and the effect will be of greater significance. Ouaisne for instance is a small site of 10 Hectares, however, it supports some of our most endangered species, and is probably the most diverse of all areas of land in Jersey. However it is sandwiched in-between housing, car parks and the sea, and currently adjacent land which would have provided additional grassland for those species which live there, is being developed for luxury housing, further reducing the area available for species such as the grass snake, which is could be extinct in Jersey in the next 10 years.

A wide range of habitat management and species management tasks are undertaken each year within SSI's and other areas of nature conservation interest. Habitat management activities are targeted towards improving the condition of the Island's habitats.

6.3 Plant Health

The key note of the last few years including 2010 has been the increased risk of Invasive Non - Native Species (INNS) establishment in Jersey with particular reference to tree pest and disease.

INNS are an important driver of biodiversity loss and are a problem of growing significance, due to the increase in the speed and volume of movement of goods and people. They are

also considered to be the second biggest threat, after habitat loss and destruction, to biodiversity worldwide and importantly, the greatest threat to fragile ecosystems such as islands. Examples found in Jersey include;

Gypsy Moth

- Gypsy moth (Lymantria dispar) a moth of Eurasian origin, was introduced to North America in the late 1860s and has been expanding its range ever since. It was detected in Jersey in its larval form in 2002, and numbers rose rapidly over approximately 5 years.
- Great efforts have been made to avoid insecticide use and instead pheromone trapping and disruption methods were pioneered to prevent further population increase, the result of which could have been massive defoliation of a wide range of host trees, including oak.
- Annual monitoring between 2002 and 2010 revealed a sharp rise then an equally sharp fall in population over this period.
- In 2010 trapping revealed a very low level of the moth present and monitoring will continue.

Oak Processionary Moth

- The Oak Processionary Moth (Thaumetopoea processionea) is a moth whose caterpillars are pests in oak forests and pose a health hazard because of their poisonous hairs.
- The moths are widely distributed in central and southern Europe, and are occasionally found as far north as Sweden. In the southern countries of Europe the populations are controlled by natural predators, but these predators do not exist in northern Europe. Their range is expanding northward, possibly or partly as a result of global warming.
- The Oak Processionary Moth has been present in Jersey and parts of west London for the last few years. As well as feeding damage to the trees their hairs are blown on the wind, causing itching, rashes, eye irritation and respiratory problems in humans and animals.

- In 2009 there was a notable outbreak in St Helier, and 2 trees were removed to protect public health whilst pheromone traps were deployed island wide to moderate the population.
- In 2010 only a single population was discovered in St Martin.

Colorado Beetle

- Both in 2009 and in 2010, a single live Colorado beetle was found in Jersey, both were thought to have arrived on freight/traffic.

Unidentified Tree Pests

- Two stands of pine trees, one in St Martin and one at Noirmont, were badly damaged and killed by between 1 and 3 invasive insect species.
- Larval samples were taken from dead wood and sent to the Forestry Commission for identification whilst wood has been removed and isolated in the Lab for further analysis.

Termites

- Termites were identified damaging roof trusses in a property in St Helier and samples sent the Natural History Museum. However, identification was not possible on the immature stage found. The States entomologist returned to re-sample the site for mature stages, by which time the property had been treated. Monitoring continues.

Statutory Diseases

- Surveys carried out across the island confirmed the absence of Sudden Oak Death disease in susceptible hosts.
- Fireblight was detected, using ELISA analysis in hawthorn and apple samples from a number of sources, including a cider apple orchard. Eradication measures were immediately undertaken under supervision by the Plant Health Inspectorate.

Other Threats

- Widespread die-back of bracken in a number of locations (e.g. Ouaisne Common, Les Mielles) was noticed early in the year. Culturing of fungi isolated from diseased plants, revealed the presence of 2 pathogenic species which may become useful in future bio-control of bracken.
- Vydate - in 2009, many potato crops revealed high residues of Vydate, a soil applied pesticide. Crops were strictly monitored and none exceeding the set Maximum Residue Level were allowed in to the food chain. It is thought that cold, dry

conditions at planting, combined with unsuitably low pH levels prevented the normal breakdown of the product. In 2010 use was much reduced, crops monitored and no residues were detected.

6.4 Marine resources, fisheries, and aquaculture.

Jersey's 800 square miles of territorial waters support not only unique and varied ecosystems such as those attracting international recognition as Ramsar sites but that also support a vibrant fisheries and aquaculture industry.

The objective of the Marine Resources Section of the Department is to protect and conserve the marine ecosystem from anthropogenic impacts and to mitigate if possible adverse natural effects. Core work for the section continues in 2010 to include the regulation of the commercial fishing industries and leisure fishing through the appropriate conservation legislation and then by active enforcement both at sea and on land.

The wider role of coastal zone management through a dedicated officer also rests within the section which includes the care of sea bird and marine mammal populations, management of Ramsar areas and authorisation of any dumping or construction within the marine environment under the Food and Environmental Protection Act (FEPA).

The section has carried out relevant experimental and survey work together with compilation of detailed catch statistics to enable it to present to the Marine Resources Panel and Ministers suitable data to assist in taking new management decisions.
Cross border management with neighbouring jurisdictions of the UK and France also falls within the remit of the section.

Continued and significant steps are being taken to balance environmental and economic success with the adoption of the Coastal Zone Management Strategy in 2009 alongside the Granville Bay treaty which acts a mechanism to conserve and enhance the local fishery on a regional scale involving negotiation with the French neighbourhood administrations.

Key to the implementation of these management schemes are the enforcement teams. An intensive monitoring and surveillance scheme results in annual boarding and inspection of over 300 vessels in local waters . Severe infractions of conservation regulations are taken to the Magistrates or Royal Court depending on the severity of the case. Shore-based inspections are also conducted to ensure minimum size regulations and correct fishing practices are being adhered to.

Despite considerable progress in the last few years there are some major issues that we see that need to be addressed in the short and medium term are:

1) In order to protect exploited fish stocks and the wider aspect of marine biodiversity EU and UK legislation is modified and updated very regularly which necessitates similar law drafting in Jersey. Jersey needs to do this to address our Treaty and Territorial commitments and practically to avoid Jersey being used as a 'back door' for illegal and destructive fishing practices.

2) Maritime renewable energy projects may pose threats to sensitive marine species (e.g. wind farms and migratory birds) and sensitive and localised habitats (e.g. maerl beds, sea grass beds) and mitigation must be considered wherever possible. The use of a Marine Spatial Planning approach will facilitate this.

3) Marine parks and a network of marine protected areas (MPA's) are being considered by most maritime nations and Jersey is no exception in this. The Bailiwick is likely to have neighbouring designated parks immediately adjacent to Jersey Territorial waters and study of internal zones and integration with neighbouring zones will undoubtedly involve a significant amount of work in the future.

4) Climate change is forecast to bring with it a number of elements that will affect the marine ecosystem. If ocean acidification occurs as predicted it is likely to affect our fishing industry which is predominantly for shellfish as the production of shell material will be significantly compromised. A small rise in sea temperature is predicted to allow more disease outbreaks to occur with subsequent on the fish farming and capture fisheries as well

as the ecosystem itself. Climate change is also predicted to effect the distribution of marine organisms, some may disappear and species from other zones may find the local marine climate to their advantage. Other as yet unpredicted effects nay also occur.

5) As fishing is nomadic in nature the Bailiwick needs to maintain and in some cases create partnership agreements with neighbourhood authorities so that local resources are not overexploited by non local vessels or conversely that existing rights in adjacent areas are maintained so that local effort offshore is displaced back to the Island. Existing Treaties, Memoranda of Understanding and agreements will need regular maintenance.

7.0 The Challenges ahead

This report has outlined in some detail, environmental issues faced by the department and the island that were identified in the 2005 State of Jersey Report and will be expanded upon in much greater detail in the State of the Environment Report 2005-2010-.

Challenges to the Island's and the wider global environment are ever increasing through anthropogenic and natural activity and these frame the issues faced by a dedicated team of officers from the Department. Yet, resources continue to be limited and this forces innovation and careful thought in how we carry out our roles. Communication of what we do, and how and why we do it, becomes ever more critical if we are to focus our efforts most effectively.

To finish there are number of emerging strategic challenges that we will need to continue to focus on over the next 3-5 years:

- **Sustainable resource management** – Balancing the social and economic need for resources and infrastructure with an increasing and ageing population using the 'reduce, manage and invest' framework. In particular, maintaining and enforcing good spatial planning underpins this objective. For example, meeting most of the Island's development needs from within the existing urban area reduces the need to travel and provides more sustainable travel choices whilst enabling the regeneration of the urban environment and protection of the countryside.

- **Ecosystem services** - Protecting and evaluating Jersey's ecosystem services (e.g. clean air and water, good waste management and a healthy working countryside and marine environment) through a proportionate regulatory regime in line with best practice and global commitments will help to ensure a healthy local population and environmental quality.

- **Investing-to-save** – Investment in environmental services and infrastructure can have long paybacks and associated benefits that are difficult to quantify. For example the health benefits arising from a successful increase in sustainable transport options e.g. walking and cycling, should contribute to the management of obesity in the general population. Continued investment in the environment in the face of the economic downturn is necessary, in particular in the Rural Economy.

- **Energy** – Achieving secure, affordable and sustainable energy supplies against a backdrop of global rising prices and increasing global energy insecurity is seen as vital.

- **Heritage and Biodiversity** – Conserving and enhancing our unique natural and historic environments, including the habitats and special places and buildings that help to define the Island's unique character and identity, and which underpin Jersey's high quality of life. This is particularly important against a requirement for increased housing and economic growth and a long-term changing climate. The latter is especially relevant with respect to climate sensitive industries such as agriculture and fisheries.

- **Future proofing** - economic, social and environmental decision making in terms of both mitigating the impacts of climate change and adapting current practices in preparation for a changing climate

These challenges also bring forward opportunities for the Island that can be summarised as follows:

- **Creating a low carbon economy** – Transforming Jersey into a low carbon economy with the potential for economic growth and on-island technology trials/projects as a result (e.g. positioning Jersey as a leading jurisdiction for Cleantech investment; development of infrastructure and regulatory / legislative framework to develop electric vehicles sector).

- **Green Skills** – In partnership with the private sector, developing a Jersey scheme to provide a workforce with the skills and knowledge to support and maximise the opportunity for development of Cleantech or other appropriate initiatives; including retro and refit of energy efficiency measures in the built environment e.g. smart metering.

- **Renewable Energy** – Now and into the future, the potential for Jersey to use its natural energy resources (e.g. tidal, wind, solar biomass) is great at both the large and small scale. 'No regrets' preparations should continue to be made for this long-term objective.

- **Energy Efficiency** – further development of services and integration into more stringent building bye laws and the development of a Jersey Code for Sustainable Architecture / homes, to cover both new build and refurbishment of existing properties.

- **Climate Resilience** – developing strategies to ensure resilience is incorporated into policy and decision making in recognition of a changing climate.

- **International opportunities** - Maintaining and enhancing Jersey's European and international reputation through compliance with Multi-lateral Environmental Agreements, working with CI Brussels and London offices, and international working and trade.

- **Awareness and Information** – Engender behavioural change through environmental programmes across all sectors through the work of the ECO-ACTIVE campaign.

- **Information provision** - Support the ecosystems approach, promote works related to biodiversity, and ensure MEA compliance. Consider becoming signatory to the Aarhus convention along with the possible development of an Environmental observatory.

- **Policy integration** – Integrated environmental policy setting and evaluation across the States of Jersey.

- **Government to take a lead** – achieve full accreditation to Eco-Active States by 2015 to support organisational efficiency savings.

- **National Park** – To ensure that the National Park management plan is developed and implemented with the support of key stakeholders.

- **Implementation of the Rural Economy Strategy**– Delivery of rural development initiatives to encourage sustainable growth through rural development and agri-environment measures. Includes: developing a food security plan, the production of Fisheries and Marine Resources Strategy, a review of the Agricultural Land Law, the development of minimum environmental standards for farms and the establishment of a Research Priorities Board.

- **Sustainable development** – implementation and monitoring of planning policy to deliver a more sustainable pattern of development in the Island that ensures the optimal use of already developed land whilst meeting the Island's development needs and reducing the need to travel.

- **Planning for homes** – continue to work in partnership, within the States and with other key stakeholders, to deliver homes that are affordable, to rent and buy, by those least able to gain access to a good standard of residential accommodation.

- **Urban renewal** – through the development and implementation of more detailed policies and guidance, encourage and enable investment in the urban fabric and open spaces of the Island's built environment and infrastructure, and in particular St Helier, to provide a high quality environment that retains its character and identity, where people want to live, work and visit.

- **Heritage matters** – continue to develop an awareness of the quality and value of Jersey's unique historic environment, and its special buildings and places, and to encourage a sense of pride and appreciation of owning and caring for an historic building.

We as a department are extremely proud of the broad variety of work that we do and the professional manner in which it is delivered. The issues discussed in this report represent only part of that work. As is evident from the above summary of challenges and opportunities there is still much to do. However, the Department we will continue to

enthusiastically tackle them in partnership with our stakeholders and the public as we have done throughout 2010.

Appendix One – An Analysis of the Copenhagen Accord and the response from Jersey

The Copenhagen Accord calls for emissions to peak as early as possible as well as a collective commitment by developed countries to financially support developing country actions in mitigation and adaptation. The following table outlines the 12 key points from the Accord and cross-references the proposed local response to the issues raised. Unsurprisingly many of these are proposed in the forthcoming draft Energy White Paper.

Agreement from the Copenhagen Accord (All text directly quoted)	Local response to issue raised
We underline that climate change is one of the greatest challenges of our time. We emphasise our strong political will to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities. To achieve the ultimate objective of the Convention to stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, we shall, recognizing the scientific view that the increase in global temperature should be below 2 degrees Celsius, on the basis of equity and in the context of sustainable development, enhance our long-term cooperative action to combat climate change. We recognize the critical impacts of climate change and the potential impacts of response measures on countries particularly vulnerable to its adverse effects and stress the need to establish a comprehensive adaptation programme including international support.	In the evolving Energy White Paper a goal of achieving secure, affordable and sustainable energy is proposed. This is to be achieved through a framework of policies which fall into the following categories: • Doing more with less – reducing energy use; • Adopting sustainable energy solutions; • Ensuring a secure and resilient energy supply; • Preparing for the future. The proposed polices are set in the context of an emissions reduction target of 80% on 1990 baseline levels by 2050. This is inline with European Union targets that aim to stabilise the increase in global temperature to below 2 degrees Celsius
We agree that deep cuts in global emissions are required according to science, and as documented by the IPCC Fourth Assessment Report with a view to reduce global emissions so as to hold the increase in global temperature	The draft Energy White Paper acknowledges the IPCC Fourth Assessment Report as the scientific authority in respect of global climate change. It proposes policies in line with best practice to

below 2 degrees Celsius, and take action to meet this objective consistent with science and on the basis of equity. We should cooperate in achieving the peaking of global and national emissions as soon as possible, recognizing that the time frame for peaking will be longer in developing countries and bearing in mind that social and economic development and poverty eradication are the first and overriding priorities of developing countries and that a low-emission development strategy is indispensable to sustainable development	reduce emissions to a level commensurate with Jersey's position as a developed nation.
4. Adaptation to the adverse effects of climate change and the potential impacts of response measures is a challenge faced by all countries. Enhanced action and international cooperation on adaptation is urgently required to ensure the implementation of the Convention by enabling and supporting the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing countries, especially in those that are particularly vulnerable, especially least developed countries, small island developing States and Africa. We agree that developed countries shall provide adequate, predictable and sustainable financial resources, technology and capacity-building to support the implementation of adaptation action in developing countries.	The draft Energy White paper proposes a policy that investigates how overseas aid contribution can be coupled with *bona fide* partnership projects in developing countries. These might include a carbon reduction project that could also be used to off set Jersey's residual carbon emissions. In addition a proportion of overseas aid is allocated towards disaster and emergency relief from natural disasters and human conflict. It is likely that in the future such disasters and conflict are more commonly likely to arise as a result of the effects of climate change.
5. Annex I Parties commit to implement individually or jointly the quantified economy-wide emissions targets for 2020, to be submitted in the format given in Appendix I by Annex I Parties to the secretariat by 31 January 2010 for compilation in an INF document. Annex I Parties that are Party to the Kyoto Protocol will thereby further strengthen the emissions reductions initiated by the Kyoto Protocol. Delivery of reductions and financing by developed countries will be measured, reported and verified in accordance with existing and any further	Jersey is a signatory to the Kyoto Protocol through the Government of the United Kingdom and our emissions monitoring is accounted for with UK emission budgets. Upon the extension of the Protocol to Jersey the UK Government tasked the Island with producing, 'where possible, policies in line with the objectives of the UK Climate Change Programme'. In any subsequent commitment periods targets would be discussed and would be

guidelines adopted by the Conference of the Parties, and will ensure that accounting of such targets and finance is rigorous, robust and transparent.	expected to be what the Island could be 'reasonably expected to deliver'. The proposed framework of emissions reductions in the draft Energy White Paper fall safely within this requirement.
6. Non-Annex I Parties to the Convention will implement mitigation actions, including those to be submitted to the secretariat by non-Annex I Parties in the format given in Appendix II by 31 January 2010, for compilation in an INF document, consistent with Article 4.1 and Article 4.7 and in the context of sustainable development. Least developed countries and small island developing States may undertake actions voluntarily and on the basis of support. Mitigation actions subsequently taken and envisaged by Non-Annex I Parties, including national inventory reports, shall be communicated through national communications consistent with Article 12.1(b) every two years on the basis of guidelines to be adopted by the Conference of the Parties. Those mitigation actions in national communications or otherwise communicated to the Secretariat will be added to the list in appendix II. Mitigation actions taken by Non-Annex I Parties will be subject to their domestic measurement, reporting and verification the result of which will be reported through their national communications every two years. Non-Annex I Parties will communicate information on the implementation of their actions through National Communications, with provisions for international consultations and analysis under clearly defined guidelines that will ensure that national sovereignty is respected. Nationally appropriate mitigation actions seeking international support will be recorded in a registry along with relevant technology, finance and capacity building support. Those actions supported will be added to the list in appendix II. These supported nationally appropriate mitigation actions will be subject to international measurement, reporting and verification in	N/A for Jersey as an Annex I country

accordance with guidelines adopted by the Conference of the Parties.	
6. We recognize the crucial role of reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas emission by forests and agree on the need to provide positive incentives to such actions through the immediate establishment of a mechanism including REDD-plus, to enable the mobilization of financial resources from developed countries	Jersey will maintain a watching brief and provide input where appropriate, on the development of REDD-plus mechanisms. Should such mechanisms become established, the relevance of Jersey's participation will be assessed.
7. We decide to pursue various approaches, including opportunities to use markets, to enhance the cost-effectiveness of, and to promote mitigation actions. Developing countries, especially those with low emitting economies should be provided incentives to continue to develop on a low emission pathway.	The draft Energy White Paper proposes an investigation and the provision, where appropriate, of support and advice to enable and empower the local finance sector to participate in carbon markets and Kyoto mechanisms. The latter seek to assist developing countries with the development of renewable energy projects to encourage sustainable growth for example Clean Development Mechanism projects.
8. Scaled up, new and additional, predictable and adequate funding as well as improved access shall be provided to developing countries, in accordance with the relevant provisions of the Convention, to enable and support enhanced action on mitigation, including substantial finance to reduce emissions from deforestation and forest degradation (REDD-plus), adaptation, technology development and transfer and capacity-building, for enhanced implementation of the Convention. The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010 . 2012 with balanced allocation between adaptation and mitigation. Funding for adaptation will be prioritized	The exact mechanism for the financial mechanism to assist developing countries with mitigation and emission reductions (primarily the Copenhagen Green Climate Fund) is not yet decided. Jersey will maintain a watching brief on this area and will provide input where appropriate. Upon the establishment of such mechanisms, Jersey's participation, either directly or through the UK Government, will be assessed.

for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa. In the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. New multilateral funding for adaptation will be delivered through effective and efficient fund arrangements, with a governance structure providing for equal representation of developed and developing countries. A significant portion of such funding should flow through the Copenhagen Green Climate Fund.	
9. To this end, a High Level Panel will be established under the guidance of and accountable to the Conference of the Parties to study the contribution of the potential sources of revenue, including alternative sources of finance, towards meeting this goal.	See comment above point 8.
10. We decide that the Copenhagen Green Climate Fund shall be established as an operating entity of the financial mechanism of the Convention to support projects, programme, policies and other activities in developing countries related to mitigation including REDD-plus, adaptation, capacity-building, technology development and transfer.	See Comment point 8 & 9.
11. In order to enhance action on development and transfer of technology we decide to establish a Technology Mechanism to accelerate technology development and transfer in support of action on adaptation and mitigation that will be guided by a country-driven approach and be based on national	On the surface it is unlikely that jersey would be able to significantly contribute to such an initiative given the lack of research and development in this area on-island.

circumstances and priorities.	
12. We call for an assessment of the implementation of this Accord to be completed by 2015, including in light of the Convention's ultimate objective. This would include consideration of strengthening the long-term goal referencing various matters presented by the science, including in relation to temperature rises of 1.5 degrees Celsius	The approach proposed in the draft Energy White Paper would be supportive of an ongoing reassessment of the goals of the Copenhagen Accord. The policies proposed by the draft White Paper have the ability to be expanded and strengthened should the scientific evidence suggest that more stringent targets are required.

[i] Steve Sorrell, Senior Fellow of the UK Energy Research Council, October 2009. http://www.ukerc.ac.uk/support/tiki-index.php?page=Global+Oil+Depletion

[ii] At least among those who do not subscribe to the abiotic theory of petroleum production,
[iii] In this instance by oil industry expert Michael Klare, Professor of Peace and World Security Studies at University of Massachusetts

[iv] Dr Michael Daly http://www.bp.com/genericarticle.do?categoryId=98&contentId=7037773

[v] The establishment, membership and terms of reference of 'The Jersey Energy Trust'. (MD-PE-2009-0114)